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1909

Journal

E. H. M.

Driver from St. George
S. C. Hardy

Joseph J. Atkins
Sept 11th from St. George

Deposit 15³⁰ at Bowman & Co
Kanab to Capt. S. D. Rust

Anal glands, I saw a gall from
a coyote made left to prominent
in a hollow made from a scent
for trapping Coyotes, probably
wolves. This is the scent used
by Owens - Game warden
Game warden on Kaibab Reserve
James Owens to Supervisor
Kanab, Utah

~~10 good ones for 3
+ 10 more for 3
Sept 18 1.55~~

Forest Supervisor Kanab
John H. Clark

Sept 10 Saw the Cylindropuntia &
Yucca baccata at rim of
Grand Canyon at Bright Angel Point

Sept 11 Camp at Bright Angel Sp.
Rode several miles over the
mesa N. of Camp after
S. kaibabensis was seen. Saw some
but several places where the
squirrels had been at work on
pine cones & tips of pine branches.
~~The N. slope of the country~~ The country, however
is from 100 to 300 ft above camp
(8100-8300 ft). On the level tops
of the mesa is a mixture of *P. ponderosa*,
Lawsonia, *Aspens*, *Balsam pop* and
Abies douglasii - the *P. ponderosa*,
most common but *A. douglasii*
almost as numerous & equally
large trees & the *Balsam* making
up balance. Cottonwoods were
abundant singly & in patches
among the pines though most
of the wooded top is comprised

~~Sanderson~~

N. Slopes South exposures
have more yellow pines
the latter often being the only
tree but even on S. exp. in
most cases Abies & sometimes
Balsam & aspens were
found. When I came
out on the rim of Bright
Angel Canyon a belt of ^{small} Gambel
Oak was found. In this locality
the transition appears to be
so nearly cut out that it can
be marked only as a very narrow
line along rim of Canyon.
The top of the mountain down
cold N. slopes to about 7500 ft
at least & from 8000-8500 ft
might be called Canadian
as it is made up of 3 species
firs & aspens & scattered pines

(~~at~~ 2 species) abundant aspens.
~~a~~ A strong ^{cold} S. wind with masses
of drifting clouds all day & colder
than yesterday. A flock of 7 wild
geese seen flying over in the morning
headed S. across the canyon at
a high elevation - a sign of colder
weather to follow! Hypocichlas
like those collected were common
in mixed woods at 8200 ft this
morning. Other birds very scarce.
Juniperus communis is scattered
through the mixed forest ~~formed~~ at
8200 ft. today.

In the ~~valley~~ little park valleys
on the Plateau there is an
abundant flora of small herbs
3 Ranunculus, an Aster

Sept 12 down
Bright Angel Creek to Colorado
R.R.

From crest at 8000 down to
Grand Oak, Acer, Mangrove
Will Locust, Ceanothus
Yucca baccata

At 7500 ft down to ft
Mangrove in extensive patch
on south side slopes

Juniper & Pinus
Came in now abundantly
at 7300 ft with large
patches of mangrove
Scattered yellow & black
leaf pines

At 6200 ft. Large yellow
flowering pine, big oak
vine, large stalked
agave came in still

in bottom of canyon Maples
Yambul Oak, Mangrove,
thick grass, broad shrub,
small broad Ceanothus, Pinus
Red Cedar, Black Jack & Yellow
Pine, The fir & balsam had
practically ended at about
6500 ft

Red fruited Cactus &
Ephedra came in at 6000 ft
at this altitude the slopes
suddenly became largely
covered by brush of all
kinds but with numerous
Cedars & pines

The small prickly leaved
Oak came in at 6000
Big pines drop out
abruptly at 6000 ft
Pinus trilobata came in at 5500

Opuntia polyacantha & *Sperm.*
grain. seen at 5200 ft

Wild grapes came in at 4900 ft
& abundant at 4800 ft

Cottoneaster & *Willows* com.

When we reached Creek at 5000 ft

At 4500 ft *Ephedra*-like

Comp. came in

At 4500 ft. Veg. mainly patches

oakbrush, piñon, Cedar,

a few manzanita *Rhus trilob.*

Ephedra & *Ephedra*-like comp. Agave

yucca baccata & *Red pointed Opuntia*

O. polyacantha

A. monosa came in at 4400.

At about this elevation the

Cedar & piñons suddenly

dropped out

Blue tailed lizard seen at

4100 ft

The small leaved *Cercocarpus*
was common from 8000 down
to 4100 in Canyon

The men with maysa that
no mt. sheep are known
along N. side of Canyon in
this section except in Kanab
Canyon where a few are reported
They say they are more common
on south side of Canyon

Arborescent pear leaved *Opuntia*
came in at 3700 ft

At 3000 ft *Atriplex canescens*
came in & the small leaved
oak dropped out & the *monosa*
became much larger & the only
prevailing shrub on flats &
lower slopes

Thornless Cocks came in 3200.

We reached the mouth of
Bright Angel Creek through a
narrow & very rocky canyon about
5 mi. long with ~~for~~ rugged granite
walls rising sheer on the sides.
In high water this road is closed as
the water marks on walls show a
depth of from 10 to 25 ft. of water
in flood time which is not often
with about half a mile
of mouth the narrow canyon
opens out to a flat 200 yds.
or less wide which extends to the
river along which ^{much} narrower
belt of brush land extends for ~~some~~ ^{nearly}
a quarter of a mile ~~across~~ along base
of cliffs. At upper end of this
a trail leads a couple of hundred
yds to a cable & trolley car track
60 ft above the river & on

opposite (south) side a horse
trail is made up to top of first
mesa nearly 200 ft above river
& joins the Bright Angel Hotel trail
at the Indian Gardens.
A few hundred yds above the river
on the Bright Angel Creek flat
a camp of half a dozen tents
is built by the Cable Co. made up
of Jim Emmett, Wolsey of Kanab,
Ally, Genl Clark of Ariz & one or two
others called the Grand Canyon
Transportation Co. They made
the trail down Bright Angel Creek.
A few years ago. D. D. Rust is the
present manager who takes parties
across & runs the camp. His
P.O. address is Kanab.

Sept 13 In camp at
Mouth Bright Angel Cr. 2300 ft -
Chuckwalla lizards here.
Also a few mesquite at
upper end of Bright Angel
Cr flat, plenty of Cat Claw
Mimosa, Yucca, Spineless
and red pod Opuntia.
The spineless with cochineal
insects on the pads.

numerous herbs & shrubs
of the Death Valley type.
A very small bat like
those at Lee Ferry was
abundant & seen flying
2 hours before sunset
in shadow of the canyon
cliffs. Wild Cat & Spilogale
Tracks seen, Road-Tailed
woodrats, Raccoon, Mongoose

Ernsteria abundant
Canyon Wren, ^{a few} Yellow Warblers
like those at Lee Ferry Canyon
a few Black-headed Grosbeaks,
Rough Wg Swallow.

On way down a water ouzel
shot at about 2500 ft. They are
reported to live all along Br.
Angel Creek from ~~top~~ head down
to

Sept. 14 From Mt. Bright Angel
Cr. to Camp at Bright Angel Sp.
On way up species came in or
ended

Atriplex canescens 3000 ft came in
Ephedra like composite " "
Mat branched Ephedra " "
Gutierrezia like comp. with small yellow
flowers came in. 3000
Small leaved *Cercocarpus* came in 3000
Yucca baccata common " 3000

Also at 3000 ft. found
Strike weed } *Baccharis*
Prickly leaf comp.
" " small grass
Tooth-leaved composite shrub
(yel. fl.) } pinkish white flower ^{leaves} _{here}
& leafless form stem comp. yel. fl.
Spineless cactus } *Geranium* leaved herb
Cottonwood

The gray bunch leaved shrub with
long top stems (fls.) dropped
out below 3000

Altitudes of plants

Brown pod shrub tree 2800 —
Tree with glossy rounded leaves 2700 — 4100

Cat Claw bush 2300 —

~~Mesquite~~ 2350 — 2400

Spineless cactus 2300 —

Red-fruited " 2300 —

Cylinder cactus collected in House R. Valley 2300 —

Nail keg " 2300 —

Baccharis 2300 —

Green-stemmed strike weed 2300 —

Gray leaved high flower stem bush 2300 —

~~Leafless~~ Leafless herb yellowish fl. 2300 —

" " pinkish " 2300 —

Prickly leaf herb 2300 —

" " grass 2300 —

Gray Arrowwood-like shrub 2300 ft —

Small-frothy-stemmed prickly herb 2300 —

Small-red stemmed mat-like herb 2300 —

Small red flowered herb-*Geranium*-like leaves 2300 —

Broad prickly leaf yellow fl. shrubby herb 2300 —

Narrow scantily toothed leaves, yellow fl. herb 2300 —

Grapevine 2700 —

Apple leaf shrub came in 3100
Prickly leaved Oak " "
Small Rhus 3100 ft
Opuntia polycantha 3200 "

At 3300 ft. in bottom of Canyon
Cercocarpus (small leaf) common
Opuntia polycantha ?
" (red fruit) common

Ephedra " "
Cat Claw " "
Cylindropuntia " "
Yucca baccata " "
Ephedra-like shrub yel. fl. " "
yellow fl. toothed leaved shrub " "
Geranium leaved herb " "
Greenish fl. leafless stem a few
Gutierrezia like herb common
Stink weed a few
Apple leaved shrub a few

(3300 ft Cont.)

Baccharis a few
Whitish fl. leafless shrub a few
Atriplex canescens com
Small prickly leaf grass a few
Short branched Ephedra com
Prickly leaved Oak " "
Opuntia polyC. " "
Ephedra like shrub a few
Tooth leaved yel Comp " "

Agave
Yucca

narrow leaf Cercocarpus
4000 ft (this is where we
ate dinner going down)

Cedar (monosperma) 4100 ft alt 4200

manzanita at 4300 ft.

Pinon at 4300 ft

At 4200ft had
dinner on way up &
here the
Small leafed coccinea
Pinon, Juniper monosperma
Prickly oak
Rhus trilobata { a few
Mangrove
Red fruited Cactus &
Gutierrezia like yel. fl. coccinea
rare common & formed
a scattered growth over
the ~~low~~ & the ~~more~~ lower
slopes as shown in a
Photo, taken looking up
the gorge at 4200 ft. &
showing this growth &
also Sp. ~~Sp.~~ like coccinea
a few, Op. polycantha
Scaberrima

At 4300ft Boxelder & gray
leafed ~~shrub~~ (shrub fruit
string like currants)
At 4300ft some
~~of~~ Wild Locust
At 4500ft Wild Rose
at 6000 " " abundant
thence to 8000.

At 6000ft the prickly
leaf oak drops out & Gambel's
comes in abruptly & abundantly
Wild rose, Athaliae tree; Gray
leaf bush, Mt Ash; Mangrove
Cedar, ^{maple} pinon, Rhus trilob. all
common & first yellow pines
here; also Red Cedar & many wild locust
Vegetation becomes denser
though from 4600-6000 the
growth is more abundant than
below that alt.

At 6200 Ridge basket
& balsam first came in
with some plantain
at 6000

At 7000 ft saw *Bell's sp.*
perched on a limb of bush
sat back waving himself
his tail hanging straight
down but other side in
altitude of 7000 squirrel

In willow patch at 4000 ft
some drawers were located
Birdseye caught 2 in a
couple of traps he left on the
way down the 12th

Citellus grammurus feeding on
red Cactus fruit.

At top of trail secured another
Kaibab squirrel - the tail shows

up with great brilliancy in sun
light making the animal extremely
conspicuous

Sept 15 In camp Bright
Angel Sp.

Stayed over here today to clean
up the accumulated specimens.
The night of 12-13th to frost ice
1/4 in thick in this camp & sharp
frosts occur nightly now.

Tracks of 1 wild Cat & 1 skunk seen
at mth. of Bright Angel Cr. & 2 Coon
Cats caught morning of 14th

Sept. 16 Bright
Angel Sp. to Camp in
Canyon below (NW. 2)
Dry Park 28 m. 8000 ft.

8700 on S. slope
At 8400 ft. above
Bright Angel Sp. saw the
first scaly bark fir
since the camp in Big Park
+ 8500 on N. slope

No heavy ridged bark fir nor
balsam fir were seen among
the dense growth of scaly bark
fir on N. slopes along bottom
of gulches ~~there~~ from 8400
ft up to where B.A. Sp. is
Big Park ^{none of} scarcely any aspens
but some Juniperus communis.
On south slopes from 8400 ft up

~~were~~ to 8800 ft were all the
firs + 2 pines. The big ridged
fir apparently drops out on N. slopes
at about 8400 ft.

~~Saw~~ 2 or 3 Swainson hawks
at upper end Big Park, 1 eating
Cathartes auratus
Upper end of Dry Park 8400 ft

Sept 17 from Camp below
Dry Park to Camp north of Pyramid.
Distance 22 altitude 6000
On the mesas bordering Dry Park
as well as along Canyon leading
below to west to 3 forks (alt 7500).
Yellow ~~jack~~ Pines are common
+ the woods have the open grassy
character common to yellow
pine forest with these pines
are Jack Pines + the 2 ridge barked
fir + many aspens

At 7400-8000 ft Wild Rose &
Quercus gambelii abundant
on ^{Especially wild rose} south slopes & a few
pinons & Cedars come
in. At 7900 ~~down~~ the oak
was abundant in patches
3700 is 7500 ft
The fire about end at 3700
Aspens both ridge backed
species together though scattered
Species occur farther down
Aspens also become scattered &
mainly on north slopes
Below this while the yellow
Pine & Gambel's Oak are
predominant with a
few Cedars & pinons
Kaibab Sq. signs at 7400.
At 7300 Artem. trich. comes
in commonly on south

+ Big Spring. Abundance
of Robinia at 7300 ft in
bottom of Canyon
The Artemisia extends up
about 200 ft above this
on S. slopes & is accompanied
by abundant Cedar Pinons
& by the thinning out of yellow
pines.

On north slopes at 7300
a few of the ^{new} ridge backed fire
still occur at 7500 ft
but are getting scarce mainly on
n. slopes

Big Spring 6400 ft. by G.S. map
just above Big Sp. Rhus tri-
lobata came in common in
patches. The Box Elder came
in first at Big Sp. The
General slopes have the

Clematis

largest proportion
of Cedar & piñon
from about 7000 ft
here down it is mixed
with Yellow & Jack Pines
& *Quercus gambelii*
but should be considered
mainly upper Sonora

On steep N. slopes at
~~6000 ft~~ of side canyons
Transition comes down to
6000 ft. with a dense growth
of *Quercus gambelii* &
an abundance of scattered
rough bark fir though the
oaks cover most of the area
Near Ryan, especially on
foothills just north of there
the small-leaved *Cercocarpus*,
a small leaf *Betula* is, *Athyrium*

tridentata & *trifida*(?) were common
with scattered gambel's oaks,
~~Cedrus~~ *Juniperus monophylla* &
Pinus edulis & *Yucca baccata*
Red-fruited *Opuntia* (small samples
with fruit) & the *horrescent* *Opuntia*
Common from this area near Kanab.

Sept 18 From Camp 1 1/2 m.
N. of Ryan to Kanab Utah
30 miles.

Pitton jays / *Corvus sinuatus*

Sialia bairdi

Stocon's

Gray Titmouse

Spiz. Soc. *Orizoneae*

" *breweri*

Powcates

at Kanab

Tyrannus verticalis

~~Sept 18 From Camp 1 1/2 m. N~~
~~of Ryan to~~

Sept 19 at Kanab

Also Sept. 20 & 21 Spent
at Kanab on reports &
letters. Birdseye did some
successful trapping on
a sandy place 2 miles
south of town.

Sept. 22 Left Kanab
after 2 P.M. and made
20 miles in a SW. course
to Pipe Spring, passing
through Fredonia on the
way. Alt. of Pipe Sp. = 5000 ft.
From Kanab to Fredonia
there is a fall of about 700 or
300 ft. The *Art. tibentata*

which is most abundant
with *Atriplex canescens* Brit.
Kanab Fredonia gives way
near Fredonia & mostly
over the plains nearly to
Pipe Sp. *Atriplex confertifolia*
is almost the only plant on large
areas & near Pipe Sp. gives way
in places to *A. canescens*.

Sept. 23 Left Pipe Sp. about
8 a.m. & traveled in a southerly
course 10 m. past Cedar Knoll &
then on 10 m. beyond to where a
road branches to the west where
W.E. had luncheon. Pipe Sp. is
at the point of a ~~spur~~ of the
Vermilion Cliffs. Two old 2 story
stone houses close together with
well made loopholes for guns.

is a relic which are the dwellings
of the ranchmen living here
or relics of the days when this
section was just occupied &
this stone "Fort" was necessary
for safety. The slope from
the ranch down to the plain
~~was~~ is covered with a few
scattered Cedar & much *Atriplex*
canescens & this bush with
A. confertifolia were the only
bushes noted for 20 m. across
this gently sloping desert plain.
Much grama grass, Considerable
yellow *Chione* and the yel. f. Comp.
something like *Gutierrezia*.

White Sage & a few *Ephedra*
& common *Lycium* about 5000 ft.
made up the great bulk of the
vegetation. Malvastrum with
the pretty salmon colored flowers

The inflated stemmed leafless plant
seen at ~~Luttrell~~ was common for some
distance today but Cedar Knoll & our Camp

was rather common. Wherever
the ridges reach 5000 ft on this
plain its borders Cedar & *Pinus*
come in. We are headed for
Mt Trumbull.

Night overtook us about 10 miles
from where we left the original road
or 30 m. from Pipe Sp. we made
a dry Camp.

Sept 24 Left camp about 7 a.m.
& continued a S.W. course about 24
miles until we entered the Black Canyon
or St George Road leading south
to the old sawmills at Mt Trumbull
& Logan & then followed it for about
10 or 8 miles to a broad open flat at
South base of Trumbull where we
found 2 trails & a wagon by a
on the East side of flat where we watched
the horses. Soon after starting this morning

Asteresia tridentata came
in abundantly with a much
larger amount of *Sphedra viridis*
also Cedar & Pinions with some
small leaved *Cercocarpus*

The very rocky road led us
around the ^{west} point of Mt. Tumbull
to Tumbull Spring on the S. side
just north of Mt. Logan. We camped
at the site of an old sawmill at about
6400 ft. at the extreme lower edge
of the yellow pine belt from ^{N. slope of} Mt. Logan.
The Pinon & Cedar belt on S. side of
Tumbull extends up to about
6800 ft. or a little higher.

Gnats Sp., Porcupine, 1 meadow Lark,
Falco mexicanus, *F. s. phalaena*, (yesterday
saw 1 Golden Eagle near Yellowstone Sp.)
C. prob. frontalis, Pinon & North house jays
Red-th. Hawk, *Otocoris*, 1 Cal. Dove
Seen near Camp of last night.

1 Jack R. seen near last night's camp.
also 1 ^{W. H. T. L.} Chipmunk.

We reached Tumbull Sp. after traveling
about 16 miles from last night's camp
making a total of about 66 miles from
Kanab. Several sage brush flats
occur immediately about the W.
& S. base of Mt. Tumbull & the foothills
are covered with pinon & cedar.

Sept 25 Tumbull Sp.
In morning took horse & rode
up side of Mt. Tumbull &
half circled summit on
the benches about 150-200 ft
below top. In transition zone
were many yellow pines a few Black
Jack (no fir or spruce) much
 Gambel Oak, dwarf locust sparingly,
Roses, gooseberry, ~~and fir of the canyon~~ ^{Barberry}.
Saw

Saw many Band-tl Pigeons, Woodhens
~~Stt~~ Crested Jays, Pigeons, nut h.
Bds. Bltird, Flicker, Myadestes. ^{writes} ~~Wood~~
In the Upper Sonoran zone the
characteristic plants of the Cedar
belt on S. slope of Mt. Trumbull
are Cedar (*monophylla*), pinyon, small prickly
leaved oak, canon sp. of *Berberis*,
manzanita, *Aspen*, *tridentata*.
+ the Service Berry (apple leaved shrub)

Sept. 26 Trumbull Sp.
Rainy weather. Rained most
of last night & showers all day today.
Could not accomplish much.

Sept. 27 Trumbull Sp.
More showers in morning.
I remained in camp working on
reports. B. went out to set
traps for *Eutamias*, a grayish
species of which he caught one yesterday.
Our camp man Oron Pratt
tells me that in the Kanab Country
the Prairie Dogs are extremely abundant
on the headwaters of Sevier Riv
above Panguitch up to the
top of the divide between the head
of the Sevier & the head of Kanab Cr.
A few occur on divide a little
common on S. slope but none reach

the headwaters of the Kanab.
Sage hens are abundant as far
south along Sevier Riv. as the
mouth of Mammoth Cr. They
are very numerous from mouth
of Mammoth Cr. north along Sevier
for some dist. toward Panguitch.

Sept. 28 In morning I
rode south from camp to
top of Mt. Logan (7700 ft)
The north slope of summit for
last 500 ft. has a scattered
growth of yellow & a few Jack Pines
with dwarf locust, Gambel
Oak & some *Cert. tridentata*.
Near top of north slope *Rhus*
trilobata which became
common & extended on top of
rounded summit when

there was a mixture of this *Rhus*
with *Cert. tridentata*, the
common manzanita, the Service
berry, dwarf locust, the Gray
leaf shrub like that on rim
of Bright Angel Canyon and
another low shrub of which
a spec was taken.

From the top of Mt. Logan a good
view of Mt. Emma was obtained
& the supply of yellow pine is
confined mainly to top & N. slopes
down 700-900 ft. The upper
Sonoran goes up on S. slopes
nearly or quite to summit as
it does on Mt. Logan but
the ~~low~~ mesa like tops of mts are
in covered with yellow
pine, Gambel Oak & some
dwarf locust.

From top of Mt Logan
Returned to Camp and
after dinner moved 5 miles
northwest to a ~~water~~ pond of rain
water in a small basin-like
valley on the NW side of Mt. Trumbull
where the forest Supervisor ^{Swel} & 4 men
are camped surveying the
limits of this forest Reserve (alt 6200).
Camped at this same place is
a party out from the east collecting
fossils (Mr. ^{J. H.} Foss), Snail Shells (Mr.
L. E. Daniels) and their ² companions
~~and the Supervisor~~

Sept 29 In camp 5 m.
north of Trumbull Sp.
Worked on reports & made up
some birds. Birdseye made
up species & trapped. The
forest Supervisor Swel left

for St George in the morning.
When he came up to ~~the~~ our
camp at Trumbull Sp. a
few days ago he offered us some
fresh beef & also said he was
hauling spring water to his camp
where we now are & that his
outfit would start us off with
a supply of spring water for
our trip to St George. When
we reached him however
we got neither one nor the other.
His word is better than his performance.
We are clearing up to start in
tomorrow. Raven & least Titmouse
noted here today & a Semich
owl been up did our camp
late last night.

Sept. 30 Left Camp at
N. base of Mt. Fremont early &
made 25 miles to Clay Holes water
nearly due north, near & 20
miles further to Antelope Sp.
by 50 m. Clay Holes alt about
5000 ft. *Atriplex canescens* &
confertifolia, *Ephedra*, *Gutierrezia*
& *Gutierrezia* like plant the
main vegetation, including
also the same white stemmed *Gutierrezia*
like plant we have seen along
this route from Mammoth

alt 2600 ft

Oct. 1. From Antelope Sp.
to St. George. 25 miles
The vegetation at Antelope
Spring was mainly *Chrysothamnus*
gracilens, *Salicornia*, prickly
salt grass, both sp. of *Atriplex*
Ephedra, *Gutierrezia euthamiae*
A small angular, thorny branched
bush with small fleshy leaves
which we saw near ~~Cedar~~ at
about 5000 ft. alt. south of
Cedar Knoll (among Cedars)
on way to Mt. Fremont which
is one of most numerous plants
in all directions about Antelope
Sp. The yellow fl. *Cleome* also about
the same as *Opuntia* like one
near Kanab & occasionally
O. polycantha, *Lycium*, &
a few *Sarcocolla* berries &

Small leaved Mt. Mahogany
& considerable White Sage
On top of & just back
of Crest of Hurricane bluffs
a small bush closely like the
the brown flowered shrub
Common at Tuba came in
abundantly on tops of rounded
hills. It was only 12 to 16 in high
& grows more compactly than
the Tuba. The short angular
branched Ephedra like one
seen in Chin Lee valley also
came in here

Considerable Covillea came
in ~~about~~ less than halfway
from top down Hurricane ledge on
S. slopes. ~~Here~~ At same time
the short spiny grass like at north of
Bright Angel Cr. & the heavily white
finned small Opuntia (pear leaved)

Pictures taken from halfway
down on Hurricane ledge
to ^{west of} South over valley & Cedar &
Pinyon covered mts & another
to NW toward Pine Valley
mts across brilliantly red
fronted mesa

The Covillea ^{3 ft} covers all the
plain up about 200 ft or so
on W. front of base of Hurricane
Ledge

From W. base of Hurricane ledge
by Eld Ft Pierce the Covillea, Atriplex
(canescens & confertifolia both but not very
abundant) the willow-like slender pod
bush & mesquites along Pierce Wash,
The slender branched Guthriea-like shrub
or herb (common at Antelope Sp), the thorny

fleshy leaved shrub, a broad leaved
Yucca (at base of ledge shown in photo)
the long slender leaved Yucca out
in bottom, the a. bornescent Opuntia
photographed (sometimes with white spines
sometimes reddish brown spines, &
the white spined pear leaved Opuntia
similar to polycantha but more
densely spined, & a cylindrical Cactus
like one seen in John Horse Rock
Valley,

When we came down into
~~the~~ the Virgin Valley & while
crossing it we saw several
Oroscoptes, White Cr. Sparrows
1 flock Gambel's Quail, Brown
Sparrow & Brown Black bird &
Ravens. Numerous White-tailed
Chipmunks all the way from
Antelope Spring.

Oct. 2 Remained
at St. George attending
to correspondence, reports, getting
information about the country
& trying to arrange to go out
for a trip tomorrow.

Oct. 3 Remained
in St. George working
on reports &c

Oct. 4 Left St. George
at 7.45 am for a trip up
Virgin Valley to run out
zone lines. To Virgin City 38 m.
At about 3000 ft alt, about Leeds
there is a mixture of cedars, Rhus &
along the hillsides with
Covillea, Mesquite, Chrysothamnus
grovulus. The cedars &c are
mainly on northerly exposures

* Corolla on southern ones -

At Leeds they grow
Thompson Seedless
Mission Grapes
Malaga "

Isabella
Apricot { Mammoth Heath
Peaches { Alberta { Cling
{ Muir
Prune (French)

Plums

Black fig

Flaming Tokay

Almond (English Walnut
Hummene City + Santa Clara)

Peanuts

Alfalfa 4 ~~5~~ Cuttings

Wheat { Club varieties
{ Noos

White

Oats do well

Newberry + Ailanthus

Cotton business ended
about 1874 (began about ~~74~~
1866) owing to its not
paying. It was grown
as far up to Virgin City
seeds or down on
the muddy. It was
grown on the muddy up
to about ~~1874~~ 1902. It
was made into cotton
bathing only.

At about 3400 ft on slope
north of Leeds there is a
belt of shrubs made up
of the small leaved Oaks,
Berberis (red fruited), Ochus, trilobata
Cedars + a short slender
leaved yucca (leaves 12-15 in
+ a short trunk + a scalloped
leaved Ochus

At Toiyabeville the
valley narrows & scattered
Cedars occur all along
west side of valley to level
of town. Both sides of valley
are lava

Oct 5 Virgin City to
St George. Dist. 36 mi.

Near Virgin City we had
the small yellow flowered frost
leaved plant same as at
Lee Ferry, also yellow. Ephedra
like plant, Old man ~~shrub~~ shrub
covering wide areas, slender
leaved Yucca, also
great abundance of the
straggling stemmed Euthamia
like composite which came
in near Antelope sp.

Lycium near Virgin City
on N. side of river
yel. fl. Chione.

At about 3500 ft (S. of Virgin City)

Berberis, Rhus trilobata, a few small Cedars
came in & cut out lower down species
& mark the lower border of upper

Sonora on the north exposure
on S. side of Virgin Valley near
V. City. The Covilleas were
abundant on top & S. slope of
Hurricane Cliffs along road
up from Joplinville to Virgin

Prarie dogs abundant just
north of Kanab ^{about 2 miles} mark
the southern limit in this section

Amwood common along river at
Virgin City. Also Baccharis
On return via Hurricane
we found Covillea up to top
of Hurricane Cliffs.

The Brn fl. Shrub was abundant
from tops of Hurricane hills
at 4500 down to 3000 in
valley near Hurricane

The Driest Tortoise, Gila
Monster & Chuckwalla
are in Virgin Valley to Joplinville

Mixed with Covillea in
canyon down Hurricane Cliffs
were numerous small leaved Cercocarpus

Oct. 6 St George
Remained here
all day writing & packing
preparatory to leaving
tomorrow.

Oct. 7 Left St George at 6.50
a.m. on way to Mt Meadows & Hamblin
~~Covillea~~ distance about 40 m. alt
5750 ft. ~~Sierra~~

Covillea & other L. Sonoran plants
up to about 3500 ft & then
most of them drop out & Atriplex
canescens becomes more
common the straggly Gutierrezia
like plant, Ephedra, white stemmed

continue
Gutierrezia-like plant ~~old~~
~~man bush~~ come in
with arborescent cactus. The
old man bush comes in
about 3700 ft.

The small fleshy leaved
thorny bush out at 3600
At 3800 ft the long heavy
leaved Yucca & the
brown flowered shrub came
in with a few last scattered
Covilleas, Old man shrub
& straggly stemmed & white
stemmed Gutierrezia like plant
the small fleshy leaved thorny shrub
Atriplex canescens, arborescent
Opuntia

At 4000 ft *Asteriscia* *intendula*
Cedars, small leaf *Cercocarpus*
& *Berberis* (red berry) came in
and at about 4300 ft the small
leaf oak & large *Rhus trilobata*
Ash, box Elder ^{came} in at
place where we had lunch.
Chryso. up to 4500 or more

At the S. end of mountain
meadows is a rough conical
pile of rocks about 5 ft high
where mt meadow musk.
is said to have occurred
& John D. Lee excised
I photographed it. In the
draw leading up to mt.
meadows at about 5400 ft
patches of *Quercus gambelii*
came in & a few prickly

leaved oaks seen.
Mt. Meadow Valley, through
out its length is overgrown
with sagebrush except the
~~flat~~ land cultivated on the
ranch at each end. There
is a divide in middle of
valley at about 5900 ft alt
& the valley then descends to
N. & S. On the mts border-
ing the valley, rising to 7000
ft at highest point, the
Cedar & pinyon belt goes
slopes facing the north go
up to about 6500 ft above
which the mt. tops are
bare of timber, with some
small bushes which are
turning yellow & brown by frost.
On the slopes facing the

South the cedars & pinyons
are very much scarcer
than on N. slope - replaced
by *Artemisia tridentata*
which goes up apparently
to 6700 or 6800 ft & then
is replaced by the transition
belt.

Saw a covey of 5 Sage hens
just before reaching Hamblin.
Quail said to be abundant
at this ranch (*L. gambeli*)
Woodhouse Jay, Wh. Cr. Sparrow,
Chip. Spar. Canyon Wren
Sage Flyc (St George)

Wh. -tl Chipm. up to noon.
at 23 m. from St George.
One *Citellus grammurus* at
lunch place.

Oct. 8 Hamblin
ranch to Modena
H. m. alt. 5457 ft.

~~After~~ From Hamblin ranch
the road leads northward
through a winding canyon
for about 4 miles then out on
the nearly level sage brush
plain called the Escalante
Desert. The desert has a
SW by NE course & the
SW end is 22 miles broad
when we crossed it to
Modena on the Salt Lake RR.
Modena is at the S.E. base
of Mt. Glenora at about 5200 ft.
As we crossed the desert we could
see the Beaver Mts to the north
with a heavy white cap of snow

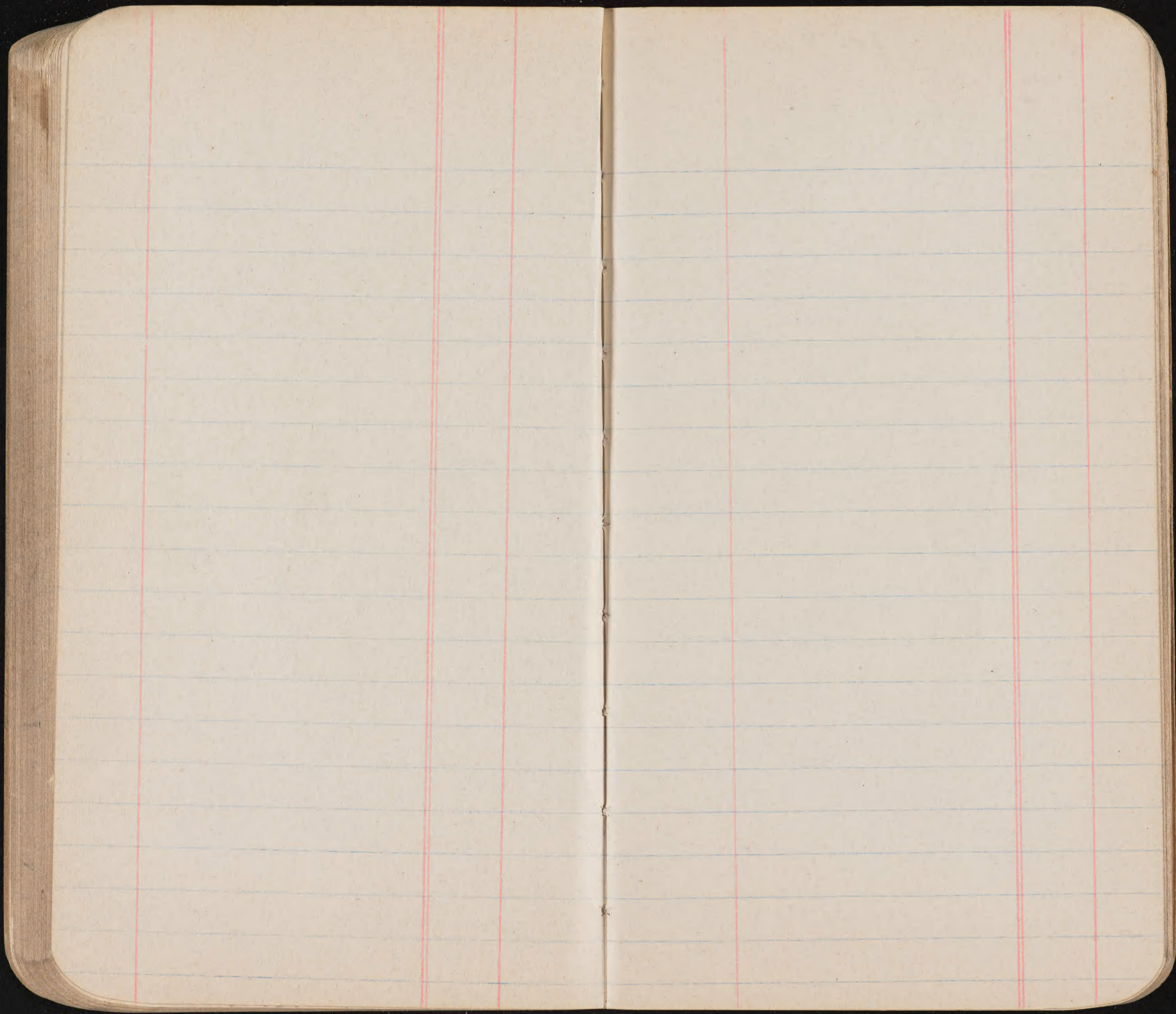
covering entire top of range.
Several Jack Rabbits seen
white crossing desert &
one shot close to Modena.
We also found an abundance
of small, short tailed Spermophilus
living among the sage
brush & especially in the
more open grassy places
on the desert the last 4 or 5
miles going into Modena.
At Hamblin ranch they report
sage hens not uncommon
& one flock of 30 was counted.
many ~~toph~~ gambels are
now gathered about the grain
fields. The small Spermophilus
was reported to be extremely
abundant farther east on
this desert & said to be very

disturbance & yield of
yellow alfalfa which they use
very freely & gather about in
such numbers that they some-
times almost destroy the field.
No Prairie Dogs known from
anywhere at this southern end
of Escalante Desert

Lower limit of Cedar belt
on mts just back of Modena
is about 5500 ft ~~and~~ extend
over top of these mts which
reach extreme limit of 7500 ft
here on Mt Elmore

The most of the low range of mts
along the west border of Escalante
desert from near Modena north
are below 7500 ft. alt. & are mostly
covered with Cedar & pinon but
some are bare. This is the southern slope

Modena Oct 9 /09
English Sparrows
Common
Black
Cedar & pinon & Sage brush



L. E. Daniels

1104 Main St LaPorte
(Shells) Ind

J. H. Ferriss (Editor Joliet
Joliet Ill. News)

Shells & Fossils

Both with zone maps &
Daniels is anxious to
get set of Biol. Surv. pub.

Total miles to Sept 8 = 660.

Sept. 8 - 11 Remained at Bright Angel Sp.

		alt
" 12 Bright Angel Sp. - Mt. Bright Angel Cr.	16	2300
" 13 Incamp	" " " "	
" 14 Mt. Br. Angel Cr. - Br. Angel Sp.	16	8000
" 16 Br. Angel Sp. - Camp Below Dry Park	28	8000
" 17 Camp Below Dry Park $1\frac{1}{2}$ m. below Ryan	22	6000
" 18 Camp below Ryan - Kanab	30	5000
" 22 Kanab - Pipe Spr.	20	5000
" 23 Pipe Spr. - Camp n. of Mt. Trumbull	30	5500
" 24 Camp n. of Mt. J. - Trumbull Spr.	16	6400
" 28 Trumbull Spr. - Flat at N. Point Mt. J.	5	6200
" 30 Flat at N. point Mt. J. - Antelope Sp.	45	

Oct. 1 Antelope Sp. - St. George	25	2600
" 4 St. George - Virgin City	38	3200
" 5 Virgin City - St. George (new road)	36	2600
" 7 St. George -	327	

Cactus photo

1 near Antelope Sp. Abhorrent
Sp. like from House R. Val. - Kanab
Antelope Sp.

1st pm Canyon Roll.
no 16 at 5500 ft looking up B. Canyon
" 4500 " " " "
Veg. at both Pinyon, Cedar, small leaved
oak, Agave cactus (2 sp)

~~How~~
Will you be here
the next 2 or 3 days?
I will be around
tomorrow to get some
information about
various matters
~~Is~~

~~Beaver~~
♀ fig 1132-453 (tail pad
l. 288 with 1/4) - 185

~~Small 1000-390 (tail pad l. 263 w. 150)
h. ft. 176~~

~~Oct 5 At Hards 125
" " 125 Fall
Oct 5 Virgin City 60
Hurricane dinner 125~~

~~204 + 202~~
✓
✓

~~40
Leads dinner 35¢
Hurricane " 40 } 75~~

~~#6 L 4463
Crown call
320~~

#6 L 4464, Sears Roebuck
Sto. Chicago
Hawk call #6 L 4468 18¢
Duck " #6 L 4461 - 34¢
In the call 56¢

